CLAIMS

1.   (Previously presented) A method for processing interactive user control for a view of a scene, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of image data representing the head of the user;

tracking the identified head of the user during display of the scene , the tracking enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the scene; and

comparing values within the search region to template values of the initial frame of the stored image data;

adjusting a view-frustum in accordance with the change in position of the head of the user;

adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device; and

repeating the identifying the search region, the comparing, and the adjusting for successive frames of the scene, wherein the comparing is performed with the initial frame of the stored image data.

2.   (original) The method of claim 1, wherein a view-frustum is initially defined by a triangular gaze projection set between outer edges of a virtual window and a

virtual position of the head when the virtual position of the head is normal to a center

point of the virtual window.

3.   (original) The method of claim 2, wherein adjusting the view-frustum

moves the virtual position of the head away from normal relative to the center point of

the virtual window.

4.   (original) The method of claim 3, wherein the virtual position of the head

being away from normal relative to the center point of the virtual window changes an

angle of the triangular gaze projection, the change in angle of the triangular gaze

projection displays a change in viewing angle of the scene provided by the video clip.

5.   (original) The method of claim 4, wherein the change in viewing angle of

the scene is a result of the detected movement of the head of the user to enable the

interaction with the scene.

6.   (Previously presented) The method of claim 1, wherein successive frames

are compared to determine a relative distance of the head of the user to manipulate a the

scale of the scene.

7.   (Previously presented) The method of claim 1, wherein the capture device

has depth capturing capability.

8.   (previously presented) The method of claim 1, wherein the initial frame of

image data is marker-less.

9.   (Previously presented) The method of claim 1, wherein the initial frame of

data is maintained throughout the scene.

10.   (Previously presented) The method of claim 1, wherein the scene is of a

video game.

11.   (original) The method of claim 10, wherein the interaction with the scene

by tracking movement of the head of the user is independent of user hand-held controls

for interacting with the video game.

12.   (Previously presented) The method of claim 1, wherein the method

operation of tracking the identified head of the user during display of the scene includes,

tracking a facial portion of the head; and

matching gray scale image data associated with the facial portion to image

associated with a template of the facial portion.

13.   (Previously presented) The method of claim 1, wherein the method

operation of adjusting a view-frustum in accordance with the change in position of the

head of the user includes,

identifying a point of interest of the scene of the scene; and

modifying the view-frustum so that the point of interest appears at a constant

position when displayed in successive scenes.

14.   (Previously presented) A method for processing interactive user control

with a scene, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of image data representing the head of the user for a

duration of the scene;

tracking the identified head of the user during display of the scene, the tracking

enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the scene; and

comparing values within the search region to template values of the initial

frame of image data;

translating a view-frustum in accordance with the change in position of the head

of the user;

adjusting a scale of the scene according to a change in a distance of the head of

the user from a capture device; and

successively updating the view frustum according to the change in position of the

head of the user relative to the initial frame of image data.

15.   (original) The method of claim 14, wherein a view-frustum is defined by

a triangular gaze projection set between outer edges of a virtual window and a virtual

position of the head when the virtual position of the head is normal to a center point of

the virtual window.

16.   (original) The method of claim 15, wherein translating the view-frustum

maintains the virtual position of the head normal to the center point of the virtual

window.

17.   (original) The method of claim 15, wherein the translating enables a

change in the scene provided through the virtual window.

18.   (Previously presented) The method of claim 14, wherein the method

operation of tracking the identified head of the user during display of the scene includes,

scanning a portion of each frame of the scene for the identified head.

19.   (Previously presented) The method of claim 14, wherein the method

operation of translating a view-frustum in accordance with the change in position of the

head of the user includes,

shifting the scene defined through the view-frustum while maintaining a lateral

orientation of the head to a view port.

20.   (original) The method of claim 14, wherein the method operation of

translating a view-frustum in accordance with the change in position of the head of the

user includes,

maintaining a focus on an object in the scene through adjustment of a view port

size.

21.   (original) The method of claim 14, wherein the method operation of

translating a view-frustum in accordance with the change in position of the head of the

user includes,

rotating the view-frustum about the head of a user according to the change in

position of the head of the user.

22.   (Previously presented) A method for managing a visible volume displayed

through a view port, comprising:

storing an initial frame of marker-less image data of a head of a user;

locating the head of a the user in successive frames;

capturing image data associated with the head of the user at a different location in the successive frames;

scanning a search region defined within the image data;

identifying the different location of the head of the user within the search region for the successive frames based on a comparison with the initial frame of marker-less image data; and

adjusting the visible volume based upon the location of the head of the user relative to the view port, wherein the adjusting includes adjusting a scale of a scene of the image data according to a change in a distance of the head of the user from a capture device.

23.   (original) The method of claim 22, wherein the method operation of scanning a search region defined within the image data includes,

defining boundaries of the search region according to a maximum distance the head of the user moves between successive video frames.

24.   (original) The method of claim 22, wherein the method operation of scanning a search region defined within the image data includes,

comparing a template of a facial region of the head of the user with corresponding image areas generated through the scanning of the search region.

25.   (original) The method of claim 22, wherein the method operation of

locating a head of a user includes,

capturing image data representing a facial region of the head; and

storing the image data representing the facial region.

26.   (original) The method of claim 22, wherein the method operation of

adjusting the visible volume based upon the location of the head of the user relative to the

view port includes,

defining a change of the visible volume being displayed according to a degree of

movement of the location of the head.

27.   (cancelled)

28.   (Previously presented) A computer readable medium having program

instructions for processing interactive user control for a view of a scene, comprising:

program instructions for identifying a head of a user that is to interact with the

scene;

program instructions for storing an initial frame of image data representing the

head of the user;

program instructions for tracking the identified head of the user during display of

the scene, the tracking enabling detection of a change in position of the head of the user,

the program instructions for tracking including,

program instructions for identifying a search region within a frame of the

scene; and

program instructions for comparing values within the search region to

template values of the initial frame of the stored image data;

program instructions for adjusting a view-frustum in accordance with the change

in position of the head of the user;

program instructions for adjusting a scale of the scene according to a change in a

distance of the head of the user from a capture device; and

program instructions for repeating the identifying the search region, the

comparing, and the adjusting for successive frames of the scene, wherein the comparing

is performed with the initial frame of the stored image data.

29.   (Previously presented) The computer readable medium of claim 28,

wherein the program instructions for identifying the head of the user includes,

program instructions for comparing successive frames to determine a relative

distance of the head of the user to manipulate the scale of the scene.

30.   (Previously presented) The computer readable medium of claim 28,

wherein the initial frame of image data is marker-less.

31.   (Previously presented) The computer readable medium of claim 29,

wherein the capture device has depth capability.

32.   (Previously presented) The computer readable medium of claim 28,

wherein the program instructions for tracking the identified head of the user during

display of the scene includes,

program instructions for tracking a facial portion of the head; and

program instructions for matching gray scale image data associated with the facial

portion to a facial portion of the initial frame of image data.

33.   (Previously presented) The computer readable medium of claim 28,

wherein the program instructions for adjusting a view-frustum in accordance with the

change in position of the head of the user includes,

program instructions for identifying a point of interest of the scene of the scene;

and

program instructions for modifying the view-frustum so that the point of interest

appears at a constant position when displayed in successive scenes.

34.   (Previously presented) A computer readable medium having program instructions for processing interactive user control with a scene of a scene, comprising:

program instructions for identifying a head of a user that is to interact with the scene of the scene;

program instructions for storing an initial frame of image data representing the head of the user for a duration of the scene;

program instructions for tracking the identified head of the user during display of the scene, the tracking enabling detection of a change in position of the head of the user, the program instructions for tracking including,

program instructions for identifying a search region within a frame of the scene; and

program instructions for comparing values within the search region to template values of the initial frame of image data;

program instructions for translating a view-frustum in accordance with the change in position of the head of the user;

program instructions for adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device; and

program instructions for successively updating the view frustum according to the change in position of the head of the user relative to the initial frame of image data.

35.   (Previously presented) The computer readable medium of claim 34,

wherein the program instructions for tracking the identified head of the user during

display of the scene include,

program instructions for scanning a portion of each frame of the scene for the

identified head.

36.   (original) The computer readable medium of claim 34, wherein the

program instructions for translating a view-frustum in accordance with the change in

position of the head of the user include,

program instructions for shifting a scene defined through the view-frustum while

maintaining a lateral orientation of the head to a view port.

37.   (original) The computer readable medium of claim 34, wherein the

program instructions for translating a view-frustum in accordance with the change in

position of the head of the user include,

program instructions for maintaining a focus on an object in the scene through

adjustment of a view port size.

38.   (original) The computer readable medium of claim 34, wherein the

program instructions for translating a view-frustum in accordance with the change in

position of the head of the user includes,

program instructions for rotating the view-frustum about the head of a user

according to the change in position of the head of the user.

39.   (Previously presented) A computer readable medium having program

instructions for managing a visible volume displayed through a view port, comprising:

program instructions for storing an initial frame of marker-less image data of a

head of a user;

program instructions for locating the head of the user in successive frames;

program instructions for capturing image data associated with the head of the user

at a different location in the successive frames;

program instructions for scanning a search region defined within the image data;

program instructions for identifying the different location of the head of the user

within the search region for the successive frames based on a comparison with the initial

frame of marker-less image data; and

program instructions for adjusting the visible volume based upon the location of

the head of the user relative to the view port wherein the adjusting includes adjusting a

scale of a scene of the image data according to a change in a distance of the head of the

user from a capture device.

40.   (original) The computer readable medium of claim 39, wherein the

program instructions for identifying the different location of the head of the user within

the search region includes,

program instructions for calculating a difference between values associated with a

template of the head and a template of the head at the different location.

41.   (original) The computer readable medium of claim 40, wherein the

program instructions for scanning a search region defined within the image data includes,

program instructions for defining boundaries of the search region according to a

maximum distance the head of the user moves between successive video frames.

42.   (original) The computer readable medium of claim 40, wherein the

program instructions for scanning a search region defined within the image data includes,

program instructions for comparing a template of a facial region of the head of the

user with a corresponding template generated through the scanning of the search region.

43.   (original) The computer readable medium of claim 39, wherein the

program instructions for locating a head of a user includes,

program instructions for capturing image data representing a facial region of the

head; and

program instructions for storing the image data representing the facial region.

44. (original) The computer readable medium of claim 39, wherein the

program instructions for adjusting the visible volume based upon the location of the head

of the user relative to the view port includes,

program instructions for defining a change of the visible volume being displayed

according to a degree of movement of the location of the head.

45. (cancelled)

46. (Previously presented) A system enabling interactive user control for

defining a visible volume being displayed, comprising:

a computing device;

a display screen in communication with the computing device, the display screen

configured to display image data defined through a view-frustum;

a tracking device in communication with the computing device, the tracking

device capable of capturing a location change of a control object, wherein the location

change of the control object effects an alignment of the view-frustum relative to the

display screen, wherein the computing device stores a marker-less reference image of the

control object for comparison to each successive frame of image data captured through

the tracking device and wherein the computing device adjusts a scale of a scene of the

image data according to a change in a distance of a head of a user from the tracking

device.

47. (original) The system of claim 46, wherein the tracking device is a

camera.

48. (original) The system of claim 46, wherein the computing device is a

video game console.

49. (original) The system of claim 46, wherein the computing device is

configured to map coordinates associated with the location change of the control object to

a view change associated with a virtual camera position.

50. (original) The system of claim 46, wherein the computing device is

configured to maintain a substantially normal gaze direction relative to a plane associated

with the display screen for both the view-frustum and a view-frustum associated with the

location change of the control object.

51. (original) The system of claim 46, wherein the computing device is

configured to adjust a view port size associated with the image data so that when the

view-frustum is adjusted, focus on an object within the view-frustum is maintained.

52.   (Previously presented) A computing device, comprising:

a memory configured to store an initial frame of image data for a template of a control object;

a processor capable of receiving a video signal tracking the control object, the processor including,

logic for comparing a portion of a frame of the video signal to the initial frame of the template;

logic for identifying a change in a location of the control object in the portion of the frame relative to a location of the control object associated with the template;

logic for translating the change in the location of the control object to adjust a view-frustum associated with an original location of the control object, wherein successive frames of the video signal are compared to the initial frame to identify the change in the location of the control object; and

logic for adjusting a scale associated with a display of the video signal according to a distance between the control object and the view port.

53.   (original) The computing device of claim 52, wherein the logic for translating the change in the location of the control object to adjust a view-frustum associated with an original location of the control object includes,

logic for shifting boundaries of a visible scene being displayed on a display screen in communication with the computing device.

54.   (original) The computing device of claim 52, wherein the computing device is a video game console.

55.   (original) The computing device of claim 52, wherein the template is stored as grayscale image data.

56.   (original) The computing device of claim 52, wherein the logic for comparing a portion of a frame of the video signal to the template includes,

logic for scanning the portion of the frame of the video signal.

57.   (original) The computing device of claim 52, wherein the control object is a head of a user.

58.   (cancelled)